



วัดล้านนา: ภูมิทัศน์วัฒนธรรมกับการเป็นพื้นที่สีเขียวในเมือง

Lanna Buddhist temple: the cultural landscape as urban green space

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บทคัดย่อ

วัฒนธรรมล้านนาและพุทธศาสนาเป็นพื้นฐานในการดำเนินชีวิตของกลุ่มคนในพื้นที่ภาคเหนือของประเทศไทยมากกว่า 700 ปี การแสดงออกของภูมิทัศน์ในการแบ่งพื้นที่การใช้งาน รูปแบบของพื้นที่ ผังบริเวณ และการจัดการพื้นที่ของวัดล้านนากลายได้แนวคิดของพุทธศาสนาแบบเถรวาทและคติจักรวาลนั้น มีความเกี่ยวข้องกับพื้นที่สีเขียวและคุณภาพของระบบนิเวศในเมืองโดยตรง วัดล้านนาทำหน้าที่เป็นพื้นที่สีเขียวภายในเขตเมือง และเป็นพื้นที่รวบรวมและเก็บรักษาพันธุกรรมของพืชพื้นถิ่นชนิดเดียวกันกับเมื่อครั้งพระพุทธองค์ยังดำรงพระชนม์ชีพร่วมกับการสร้างข้อกำหนดจากคติความเชื่อและพิธีกรรมในวัดที่ผูกโยงกับการดูแลและจัดการพื้นที่สีเขียวภายในวัดอย่างยั่งยืน บทความนี้ศึกษาและสรุปวิธีคิดทางพุทธศาสนาแบบเถรวาทที่มีความสอดคล้องกันกับแนวคิดเรื่องพื้นที่สีเขียว และพยายามอธิบายถึงการเปลี่ยนรูปจากคติความเชื่อเป็นแบบแผนทางภูมิทัศน์วัฒนธรรมทั้งที่จับต้องได้และจับต้องไม่ได้ ภายใต้สภาพแวดล้อมของวัฒนธรรมล้านนาในพื้นที่ภาคเหนือของประเทศไทยและอธิบายถึงผลกระทบของการพัฒนาเมืองต่อภูมิทัศน์ของวัดล้านนาทั้งด้านคุณค่าทางนิเวศวิทยาและคุณค่าทางวัฒนธรรม

คำสำคัญ: พื้นที่สีเขียวภายในเมือง ล้านนา วัด พุทธศาสนา ภูมิทัศน์วัฒนธรรม

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Abstract

In Northern Thailand, Lanna culture and Buddhism have been playing as principles of life for over 700 years. The Theravada Buddhism and cosmology concepts displayed through the zoning, layout, and site planning of the Lanna temple associated with culture and society, can propel the temple space to be an important component of urban green space. From an ecological value, the Lanna temple is a place of native plant collection which can be found in both the time of Buddha and the present time by cultural practices and serves as maintenance for the sustainability of the temple. This study attempts to review Theravada Buddhism concepts that reveal nature conservation, gives the perspective of conceptual transformation from Theravada Buddhism concepts to tangible and intangible heritage in the context of Lanna culture and discusses the urban development effect in Thailand on the Lanna temple landscape to enhance the awareness of the ecological value and cultural value of the Lanna temple.

Keywords: urban green space, Lanna, temple, Buddhism, cultural landscape

Introduction

The Northern region of Thailand was known as the Kingdom of Lanna in ancient times and consisted of a number of major principalities, such as Chiang Mai, Lamphun, Lampang, Phrae, Nan, Chiang Saen and their dependencies, which were located primarily in what is today Northern Thailand. While these principalities enjoyed periodic independence, they were often tributary to Burma during the sixteenth through the eighteenth centuries and, after the beginning of the nineteenth century, became tributaries of Siam (Keyes, 1975; Ongsakul, & Tanratanakul, 2006; Penth, 2000). This region has a cultural relationship with Chiang Rung (Jing Hong or Xishuangbanna in Chinese language), Chiang Tung (Kengtung in Burmese) and Chiang Tong (Luang Prabang in Laos). Theravada Buddhism was introduced in the Lanna Kingdom in the second half of the twelfth century (Sathapitanonda, 2016) and became the main religious belief in Lanna throughout its history. The sixth king, Kuena (1355-1385), and the ninth King, Tilokraj (1441-1487), who developed the kingdom to its height of civilization, built many Buddhist temples, pagodas and other important public places with high technology in grand and glorious archaeological styles which would be known later as the classic Lanna styles (UNESCO, 2016). A great number of Lanna temples comprised of various buildings on the traditional landscape were constructed, and many of them remain until today.

Cultural and social functions of the Lanna temple

The Lanna Buddhist temple and the Lanna way of life are inseparable. Buddhism has made a deep impact upon Lanna society in many respects. It is interwoven in every Lanna person's life from birth to death. Temples are centers of life and places where not only religious but also secular activities are carried out all year round. Even to the present day, people regard their local temple as common property belonging to all of them. Therefore, a temple is a unifying center which functions as an integrating and binding part of Lanna society.

Southeast Asian public spaces such as a monastery, park or side of the street could function for multiple uses, especially for the socio-economic stimulation of the city. The public space in Southeast Asia is perceived as being informal and spontaneous. Furthermore, temporary use of public space in Southeast Asia, compared to that in Western countries, is much more intensive (Oranratmanee, & Sachakul, 2014). The Lanna temple is a place for performing religious functions not only by monks but also laypeople. Rituals are regularly held, and religious philosophies are taught. Before the establishment of formal education in Thailand, monks were the only teachers available to the general populations, teaching both sacred and secular subjects. Therefore, temples were, and still are, considered as schools for boys and monks. They also served as a public health center for the surrounding community and as public places where villagers spent time for relaxation and exchanging news and knowledge. Lanna temples were used as meeting places, such the area for setting the procession of troops before war and for certain official functions of villagers. Government information is conveyed by the village headman using the temple as a natural local meeting place (Khanjanusthiti, 1996; Samadhi & Tantayanusorn, 2006).

Zoning of the Lanna temple

The general Lanna temple has three zones as follows: (Figure 1)

Buddhawas. A sacred zone where a Buddha image is enshrined and religious ceremonies are held. Key buildings here include the arch and guardians (*sum khong*), the cloister for people to give offering for alms to monks (*sala baat*), the pavilion for religious ceremonies by both monks and laypeople (*viharns*), a pagoda (*chedi*), and sand courts. Other buildings include the chapel, which is a pavilion for a group of monks to perform deeds (*ubosot*), the hall for Tripitaka (*ho dhamma*), Buddha's footprint hall, a bell tower, and a drum tower.

Sanghawas. Also known as a monastery. The buildings in this zone includes the monk residence (*kutti*), bathrooms, food storage, eating hall and sermon hall.

Thoranisangha. The surrounding area, which was donated by people for temple usage, includes the temple grounds (*kuang wat*) and is a very important space for social services. Most temples have temple grounds in the front inside of the temple. Previously, temple grounds were used for public activities, as the gathering place for annual festivities, as the place for setting the procession of troops before war, and as a meeting point for voyagers or caravan. The temple also provided a groundwater well and shade trees for public use.

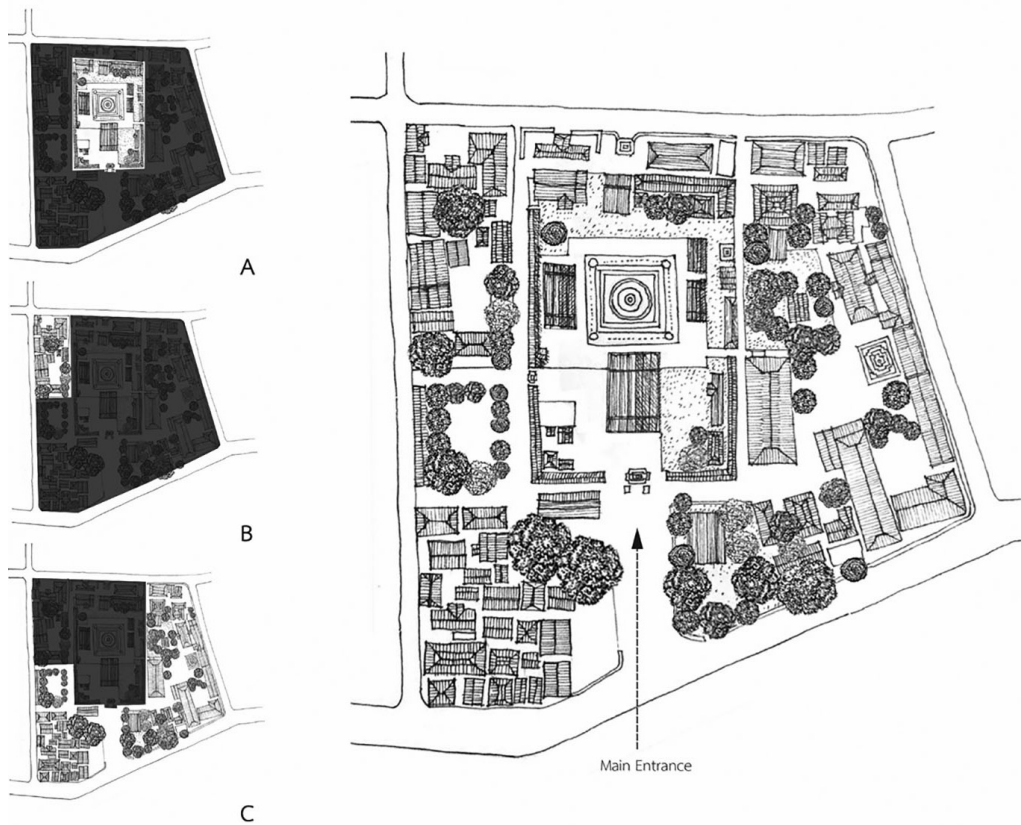


Figure 1 Zoning in Lanna temple: Wat Prathat Hari Punchai, Lamphum province
A) Buddhawas, B) Sanghawawas and C) Thoranisangha

Categorization of Lanna Temples

Sathapitanonda (2016) described Buddhist temples in Lanna culture and categorized them into two types as (Figure 2 and 3):

The private temple (wat raad) built by commoners, has just one pavilion and one pagoda and no wall separating the Buddhawas and Sanghawas zones. However, the two zones were clearly separated by a large court or row of trees.

The royal temple (wat luang) is a formal pattern and entirely of religious space and buildings. The Buddhawas zone is enclosed by the inner wall to clearly separate it from the Sanghawas zone.



Figure 2 Zoning of the private temple (wat radd) : Wat Pantao, Chiang Mai province

A) Buddhawas, B) Sanghawas and C) Thoranisangha

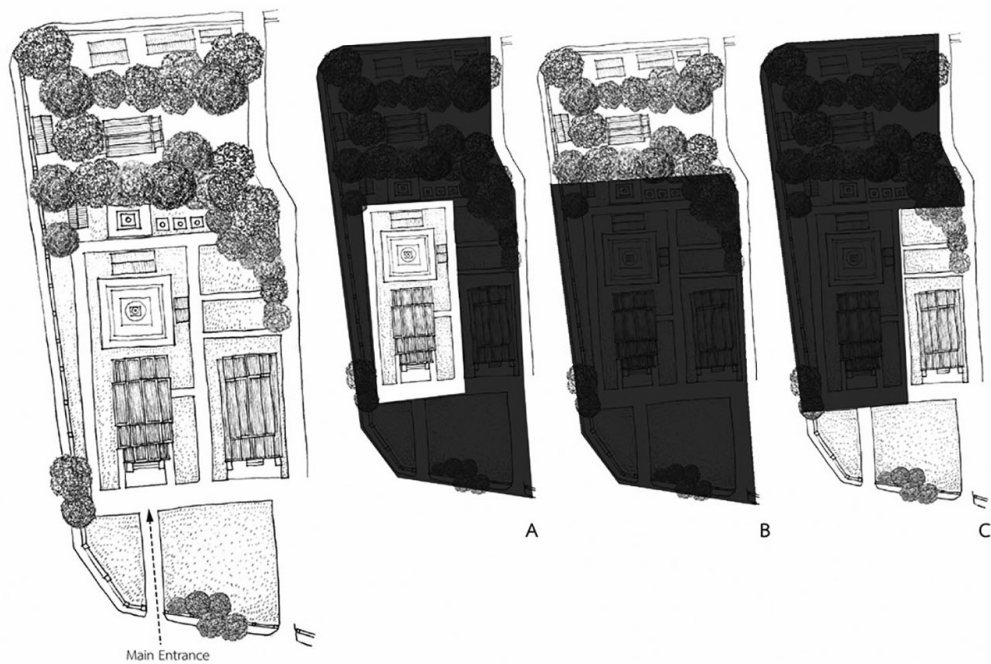


Figure 3 Zoning of the royal temple (wat luang) : Wat Chang Kham, Nan province
A) Buddhawas, B) Sanghawawas and C) Thoranisangha

The layout plan of Lanna temples

The buddhist cosmology (chakrawal khati) was a concept of Lanna buddhist symbolism described in the oldest Theravada Buddhist literature in Thailand, “The Story of the Three Planes of Existences” or “Tribhumikatha” by Lithai, King of the Sukhothai Kingdom in 1321 A.D., which was inherited by the Hindu-Buddhist cosmology and had a strong influence on literature, arts and architecture in Lanna culture (Lall, 2014). According to the literature, the universe has three main areas, called the “Tri-bhumi”. This Tri-bhumi refers to the place for the different levels of living creatures in the Samsara circle. These creatures live by their merit and sin until they go to Nirvana (Lall, 2014; Reynolds, 1976; Sathapitanonda, 2016). During the golden period of Lanna (1355-1487), the Buddhist Cosmology was adopted to plan the Buddhawas zone. The *viharn*, as well as other buildings, can be placed in four directions, surrounding the pagoda along the two-axis direction. The layout planning in the *Buddhawas* zone depicts the Buddhist concept of the universe physically from the ground level upward (Khanjanusthiti, 1996). That is, the planning includes the vertical height and horizontal direction setting with the emphasis on the center of the universe.

The pagoda represents to Mount Sumeru (*khao Pra Sumen*), which is the center of the universe, surrounded by a *vihamns* in four directions in relation to four sacred continents. The sand court manifests “*Sithandorn Samut*”, where is the ocean surrounds Mount Sumeru. The *sala baat* cloister and *kampaeng keaw* around the *Buddhawas* refers to the wall of the universe. The main *viharn* faces the eastern entrance of the temple (Supasri, 2015). The study by Sthapitanonda (2016) of the temple planning of the Lanna cultural region of Northern Thailand found only two royal temples that perfectly followed the cosmological method of Buddhawas planning, *Pra That Hariphunchai* temple and *Pra That Lampang Luang* Temple. Other temples had an incomplete plan with fewer buildings for the four main directions, such as only on the eastern and southern sides with a pagoda at the center.

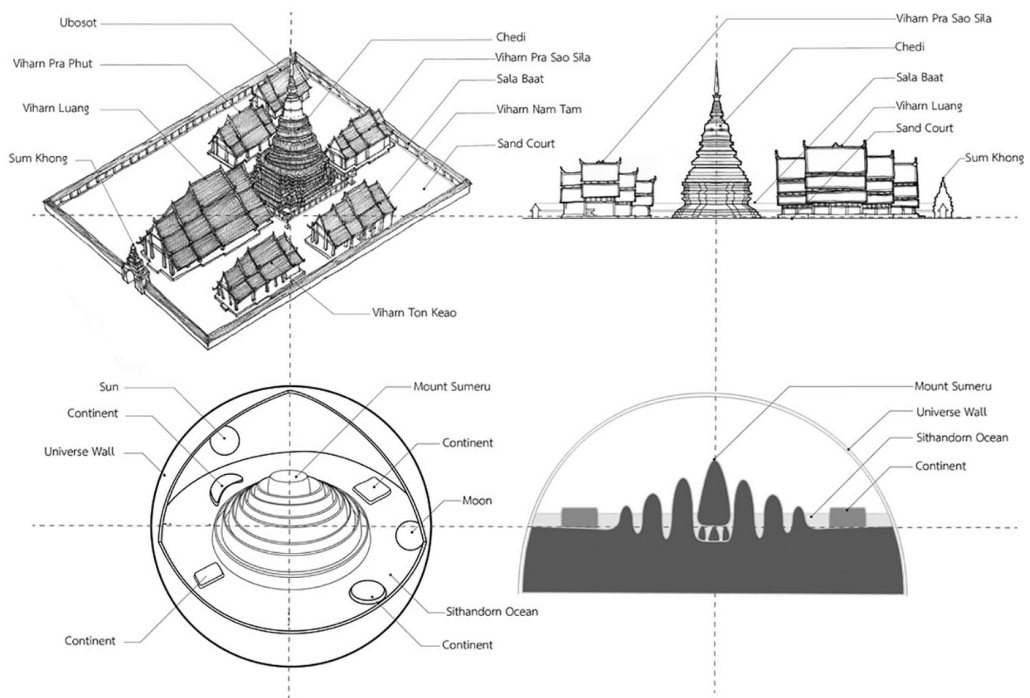


Figure 4 Layout plan of Lanna temple and buddhism cosmology (Khanjanusthiti, 1996)
Wat Prathat Lampang Luang, Lampang province

The buddhist concept in ecology

Following the concepts of nature in Theravada Buddhism, the interaction between the abiotic and biotic components of the ecosystem is through the flow of energy and matter (Sutton & Harmon, 1973). In Buddhism, the ultimate elements are earth, water, fire and wind. There are also scientific concepts reminiscent of the first law of thermodynamics as conservation of matter (Sponsel & Natadecha-Sponsel, 2003). Natural surroundings, especially forests, are considered by Buddhists as favoured places because they are conducive to meditation, thus monasteries are often located in forests. However, reflecting the Buddhist principle of “the middle way,” temples are also located in the suburbs, avoiding both wilderness and city. In this way, the monks remain in tune with nature while still exerting an influence on the city (Thurman, 1984). Furthermore, in addition to the Buddhist respect for trees as sources of shade, food, and protection for humans and other animals (Kabilsingh, 1999), the establishment of temples can help preserve the forest in some regions and promote reforestation in others as people are forbidden to cut trees or disturb any animals around the temple (Buri, 1989) and members of the Buddhist monkhood (*sangha*) are prohibited to cut trees. Indeed, Buddhist precepts and the disciplinary rules for the monkhood are supposed to protect all living beings and their environment (Swearer, 2006).

Physical function of Lanna temple as urban greenspace

Greenspace is usually, but not always, comprised of vegetation and associated with natural elements. There has been growing interest in green space research due to evidence that nature positively impacts human well-being (Frumkin, 2013; Taylor & Hochuli, 2015). From the study of Taylor & Hochuli (2017), there are two possible interpretations of green space that could provide a more functional understanding when definitions are provided. The first is that greenspace refers to bodies of water or areas of vegetation in a landscape, such as forests and wilderness areas, street trees and parks, gardens and backyards, geological formations, farmland, coastal areas and food crops. This interpretation refers to an overarching concept of nature or natural areas in general. Where general land cover is a dichotomy of either urban or natural areas (McIntyre, Knowles-Yanez & Hope, 2008), this macro understanding of green space could be a synonym of nature and antonym of urbanization. The second interpretation represents urban vegetation, including parks, gardens,

yards, urban forests and urban farms, usually relating to a vegetated variant of open space. This interpretation could be described as a subset of the overarching concept of green space that is confined to the urban environment and a subset of open space. By the scope of these two possible interpretations of green space, it can be seen that the Lanna temple landscape is a green space as follows:

The temple grounds (*kuang wat*) are usually located at the front of a Lanna temple in the area of open space within the temple. This open space also continues to surround the Pavilions (*viharns*) and Pagoda (*chedi*) in the Buddhawas zone. The temple grounds played an essential role in the city governance, as it was a meeting place of troops to prepare for war in the past and also a place for cultural and customary ceremonies (Samadhi & Tantayanusorn, 2006). At present, the temple grounds function as a place to hold religious ceremonies such as a monk's ordination (*buat luk kaew*). In the traditional new year festival (*Song Kran*), the Buddha image is placed in the grounds in the front inside the temple and people pay their respects by performing the water bathing ceremony known as "Song Nam Phra" and the temple grounds become the place for building a pagoda made of sand (*chedi sai*). Typically, the temple grounds have earth or sand or a lawn of the native turf grass and are possibly furnished with seating and shaded resting places. Trees planted in the vicinity of a temple grounds complex is to provide shade to the public and are believed to have essential qualities in supporting the rituals for family prosperity according to Buddhism. Fruit trees, as well as aromatic trees are commonly donated by the temple congregation to be planted around the temple grounds and used for ritual and healing purposes. Therefore, productive trees are one of the essential open space elements in the urban Lanna setting. In terms of ecological function, lawns or turf grass-dominated and maintained areas in Lanna temple grounds are a widespread and characteristic element of urban and suburban landscapes. Lawns provide ecological services such as water filtration (Beard & Green, 1994), moderation of the urban heat island effect (Hall, et al., 2016), stormwater management (Mueller & Thompson, 2009), floral resources for pollinators (Larson, Kesheimer & Potter, 2014) and connectivity between populations or reservoirs of species (Dearborn & Kark, 2010). While the sand field is excellent for water permeation and is renewable, clean and low-maintenance, both lawns and sand fields are suitable for recreational and aesthetic benefits to people and their pets (Beard & Green, 1994; Dearborn & Kark, 2010).

Temple trees provide well-documented multiple benefits in enhancing the livability of (Roy, Byrne & Pickering, 2012). The major functions of tree in the urban microclimate include providing shade to reduce heat on buildings and the ground (Shahidan, et al., 2010), transpiring water to the atmosphere to decrease heat storage in the urban canopy layer (Loughner, et al., 2012), and resisting wind (Gromke & Ruck, 2008). Trees are also associated with entire life of the Buddha (Sponsel & Natadecha-Sponsel, 2003). The Tripitaka scriptures have described the Buddha's with the tree (Table 1): the Buddha was born, achieved his awakening to enlightenment, and died under trees. Additionally Buddhists prize forest dwelling as an ideal environment in which to practice the religious life (Swearer, 2006). The Buddha also advocated the planting of trees (Isager & Ivarsson, 2002). For example, a villager offered the Buddha a ripe mango, and after the Buddha finished eating it, he asked Ananda, his assistant to plant the seed. On another occasion, the Buddha asked Ananda to take a branch from under the tree in which the Buddha became enlightened and to plant it in the temple for people to worship as a representation of himself (Sawangying, 2009). Also, the Buddha's teachings had a tremendous influence on Asoka, the great King of ancient India. Through Buddhism, Asoka was sensitized to the natural environment and, as a result, prohibited hunting for sport and advocated tree planting in his city (Natadecha, 1991).

On account of these reasons, Lanna temples contain the green space with numerous species of plants by the provision of Buddhism and as a remembrance of the Buddha (Table 1). The large bodhi tree (*Ficus religiosa*), under which the Buddha attained enlightenment, is regarded as a sacred tree and is commonly planted beside the temple grounds and preserved as a tree of worship. The tree can be seen in nearly every temple compound (Chiu, 2017; Samadhi & Tantayanusorn, 2006), often wrapped with a cloth to signify its holiness. Some species found in temples such as the bodhi tree (*Ficus religiosa*) and the cotton tree (*Bombax cieba*) are forbidden to be grown in residential gardens. Any species related to Theravada Buddhism scripture, such as Toddy Palm, Banyan tree, Bamboo is also planted throughout the Lanna temple.

Edible fruit trees in Lanna temples are not grown for commercial purpose, as they have an important role to play by providing kindness to all beings. Likewise, scented flower trees are also grown in Lanna temples and are a source of offering to the Buddha. Apart from these, some trees in Lanna temples are associated with animism, a previous belief of the Lanna people before Buddhism. Some other sacred trees species are also grown within the temple walls and are considered to be home to spirits. The yearly offering of plant species in temple by the categories of fruit, fragrant and holy trees are showed in Table 2.

Table 1 The tree species involved in the Buddha's life according to the description in Tripitaka scripture

Common Name	Scientific Name	Thai Name	Pali Name (in Tripitaka)	Assosiation to the Buddha in Teravada Buddhism
Bodhi Tree	<i>Ficus religiosa</i>	โพธิ์ (Po)	<i>Bodhi</i>	The Buddha understood the true nature of things (enlightenment) under the shade of a bodhi tree.
Sal tree	<i>Shorea robusta</i>	สาละ (Sha La)	<i>Sala</i>	Queen Maya of Sakiya gave birth to the Buddha while grasping the branch of a sal tree. The Buddha passed away at Kusinara city while lying between two sal trees.
Banyan tree	<i>Ficus benghalensis</i>	กร่าง (Kraeng)	<i>Nigrodha</i>	After reaching enlightenment, the Buddha moved to sit under a banyan tree to achieve the bliss of emancipation (Vimutti) in the 4th and 7th weeks.
Barringtonia	<i>Barringtonia acutangula</i>	จิกม้วน (Jig Nam)	<i>Mucalinda</i>	The Buddha is said to have meditated under a mucalinda tree prior to attaining enlightenment. When it began to rain heavily, a naga (a snake-like being) is said to have spread its hood over the Buddha and given him protection.
Khimi	<i>Manilkara hexandra</i>	เกด (Ked)	<i>Rajayatana</i>	After reaching enlightenment, the Buddha moved to sit under the khimi tree to achieve the bliss of emancipation (Vimutti) in the 6th week.
Indian coral tree	<i>Erythrina fusca</i>	ทองหลาง (Thong Lang)	<i>Parigata</i>	The Buddha spent three months in Tavatimsa (2nd level of Heaven), preaching all the time, seated on Sakka's (Lord of Devas) throne, at the foot of a paricchattaka tree.
Jambolan	<i>Syzygium cumini</i>	หว่า (Wha)	<i>Jambu</i>	As a young prince, Siddhartha (the given name of the Buddha), at 7 years old, was taken into the fields to witness a plowing contest. He left the contest and wandered until he found a jambolan tree. He sat beneath this tree and entered into a primary contemplation.
Indian Rosewood	<i>Dalbergia sissoo</i>	ประดู่ลาย (Pra Du Lai)	<i>Simsapa</i>	While the Buddha and a monk where dwelling beneath a simsapa grove in the city of Kosambi, the Buddha compared a few simsapa leaves in his hand with the number of simsapa leaves overhead in the grove to illustrate what he teaches (in particular, the Four Noble Truths) and what he does not teach (things unrelated to the holy life).
Khair Tree	<i>Acacia catechu</i>	สีเสียด (Si Siad)	<i>Khadira</i>	The Buddha spent time preaching in a cutch grove in Bhakkara district.
Neem tree	<i>Azadirachta indica</i>	สะเดา (Sa Dao)	<i>Nimba</i>	In the 11th lent (Vassa) of the Buddha, the Brahmin householders of Veranjaka met the Buddha, and under the shed of a neem tree in Savatthi, the discussion between the Buddha and the Brahmin householders of Veranjaka has recorded in Veranjaka Sutta.
Mango tree	<i>Mangifera indica</i>	มะม่วง (Ma Moung)	<i>Amba</i>	In Yamaka Pathariya, or "twin miracle", the Buddha performed a miracle. Ganda, the gardener, gave a ripe mango to the Buddha. After finishing the fruit, he poured the hand-washing water into it. Miraculously, the seed instantly grew into a mature tree full of ripe fruit.
Emblic tree	<i>Phyllanthus emblica</i>	มะขามป้อม (Ma Kham Pom)	<i>Amalaka</i>	The Buddha perform a miracle by plucking an emblic fruit from far away and then coming back to sit down in the fire room.
Sacred Garlic Pear	<i>Crateva adansonii</i>	กุ่ม (Goom)	<i>Kakudha</i>	The Buddha laid a funeral robe (used as a monk robe) to dry on the sacred garlic pear branch.
Bamboo	<i>Bambusa sp.</i> <i>Dendrocalamus sp.</i>	ไผ่ (Pai)	<i>Velu</i>	The Buddha stayed for two months in the bamboo grove called Veluvana in Rajgir city and gave the assembly the importance discourse "Ovadha Patimokha" laying down the principles of his teachings summarised into three acts: to do good, to abstain from bad action and to purify the mind.
Kapok tree	<i>Ceiba pentandra</i>	ป่าน (Noon)	<i>Kappasi</i>	The Buddha sat under the shade of a kapok tree in Uruvela city and taught the monks about the dissemination of Buddhism concepts.
Toddy palm	<i>Borassus flabellifer</i>	ตาล (Tal)	<i>Tali</i>	The Buddha spent time to a preach in a toddy palm grove in the southeast of Rajgir City.
Bael tree	<i>Aegle marmelos</i>	มะตูม (Ma Toom)	<i>Billa</i>	The Buddha answered the question of King Dandapani under the shade of a bael tree in Kapilavasthu City.
Flame of the Forest tree	<i>Butea monosperma</i>	ทองกวาว (Thong Gwaw)	<i>Kimsuka</i>	The Buddha gave a sermon to the monks by metaphor of the Flame of the Forest tree.
Cotton tree	<i>Bombax ceiba</i>	จ้าว (Ngew)	<i>Simbali</i>	The Buddha discribed the great hell in the Devaduta Sutta, one of the five small purgatories is Simpalkana-niraya, or the Silk-cotton-tree hell.
Myrobalan tree	<i>Terminalia chebula</i>	สมอไทย (Sa Mor Thai)	<i>Haritaka</i>	The Buddha recommended the yellow myrobalan fruit sprinkled in urine for a monk who was sick with Jaundice (yellowish sickness)

Source: Gooneratne (2012); Horner (2014); Sawangying (2009)

Table 2 The tree species in Lanna temple by categories of fruit, fragrant and holy trees

	Common Name	Thai Name		Scientific Name
Fruit Tree	Tamarind	มะขาม	Ma Kham	<i>Tamarindus indica</i>
	Marian Plum	มะปราง	Ma Prang	<i>Bouea macrophylla</i>
	Syzygium	มะเกี๋ยง	Ma Kiang	<i>Syzygium nervosum</i>
	Hog Plum	มะกอก	Ma Kok	<i>Spondias mombin</i>
	Coconut	มะพร้าว	Ma Praw	<i>Cocos nucifera</i>
	Santal	กระเทียม	Kra Thon	<i>Sandoricum koetjape</i>
	Longan	ลำไย	Lam Yai	<i>Dimocarpus longan</i>
	Mango	มะม่วง	Ma Moun	<i>Mangifera indica</i>
	Jackfruit	ขนุน	Kha Noon	<i>Artocarpus heterophyllus</i>
	Star Gooseberry	มะยม	Ma Yom	<i>Phyllanthus acidus</i>
	Rose Apple	ชมพู่	Chom Pu	<i>Syzygium malaccense</i>
Fragrant Tree	Bullet Wood	พิกุล	Pi Gun	<i>Mimusops elengi</i>
	Frangipani	ลั่นทม	Lan Thom	<i>Plumeria acutifolia</i>
	Champak	จำปา	Jum Pa	<i>Michelia champaca</i>
	White Meranti	พยอม	Pa Yom	<i>Shorea roxburghii</i>
	Indian Cork Tree	ปืบ	Peeb	<i>Millingtonia hortensis</i>
	Negkassar	สารภี	Sa Ra Pee	<i>Mammea siamensis</i>
	Tembusu	กันเกรา	Gan Grao	<i>Fagraea fragrans</i>
Holy Tree	Hairy-Leafed Apitong	ยางนา	Yang Na	<i>Diptherocarpus alatus</i>
	Iron Wood Tree	บุนนาค	Boon Nak	<i>Mesua ferrea</i>
	Indian Elm	ชะจาว	Ka Jaw	<i>Holoptelea integrifolia</i>

Source: Inthusophon (2014); Thammathi (2015)

The ritual practice of the sand pagoda (*chedi sai*) is the ritual practice in Lanna culture in which sand is gathered to build a sand pagoda on the temple grounds in the afternoon of the 14th of April every year, which is the second day of the traditional Lanna new year ceremony. People go to the nearby river with silver utensils or buckets, which were hung on branches of the Fishtail palm (*Caryota urens*) to be used by each household to decorate the pagoda, to carry sand from the river to the temples (Porananond, 2015). Sand in the compound of the temple represents the sea in the beliefs of Theravada Buddhism cosmology. Although Payomyong (1994) suggests that carrying sand to the temple is believed to replace the sand which is carried out inadvertently on the soles of shoes during visits to the temple throughout the year, the idea behind this practice has hitherto gone unexplained. Nonetheless, carrying sand to the temple has been regarded as a traditional practice of the Lanna people for a long time.

The sacred tree ordination refers to the long-established practice in Lanna culture of wrapping brightly colored cloth or saffron monks' robes around trees. This practice has been used to honor trees that are considered holy, such as trees of an exceptional size, in which local guardian spirits are believed to reside (Wonglangka, 2013). The large tree can be seen in every Lanna temple compound, often wrapped with a cloth to signify its holiness. The robes symbolize the new status of the trees. The “untamed and uncivilized domain” is turned into “sacred and venerated religious artifacts” and, within this religious universe, anyone cutting down a tree would be committing a religious misdeed (Tannenbaum, 2000). Lanna people also make an offering to sacred trees each year, the ceremony of which begins with paying respect to the spirits of the tree, followed by offering candles, incense and flowers, and then placing them near the tree trunk. The tree ordination emphasizes the interconnection between people and nature to incorporate spirit beliefs into the ritual process due to the strength of such beliefs (Darlington, 2007).

The offering of support to holy Bodhi trees takes place on the 14th of April of every year, the same day as the ceremony of the sand pagoda. The bodhi tree (*Ficus religiosa*), called “*Sa Ree*” in local Lanna languages, is considered by Lanna Buddhists as a form of “Chetiya,” a symbolic edifice that represents the Buddha. The Bodhi tree symbolizes the Buddha's enlightenment, thus the tree is sacred and treated in the same way as

other kinds of chetiya, such as pagodas or Buddha images that are regarded as holy, and therefore is forbidden to be grown in other gardens (Khanjanusthiti, 1996). In the belief of Lanna people, giving supportive to Bodhi tree mean giving support to religion. The parade of supporting the holy bodhi tree includes people from every community coming to the temple. A decorated long piece of y-shaped wood, carried by cart or on the shoulders of the youth, is taken to support a Bodhi tree in the temple (Sutacom, 2002). This can illustrates a strong relationship between man and plant, established and maintained by the religious activities of the laypeople at Buddhist temples.

The water libation (*yad nam*), which involves the pouring out of water from a vessel of water into a vase, drop by drop, concludes most Buddhist ceremonies (Keyes, 1987). This ceremonial libation is done to share accrued merit with deceased ancestors and all other living beings. After pouring water for dedication to ancestors, the layperson takes libation water and pours it out onto the ground above the root of the big tree in the temple to give respect to Mother Earth and the Devas of the tree (Van, 1985). Although it seem like typical plant watering, this practice can properly illustrate the fundamental cultural ecology in Lanna Buddhist culture.



Figure 5 The offering of support to a holy Bodhi tree : Wat Tung Yu, Chiang Mai province

Discussion and conclusion

The temples have often been looked at separately from other environmental areas because of the assumed higher importance placed on cultural and social benefits. However, analyzing the literature on Lanna temples, they not only provide spiritual and cultural services as urban sacred sites but also support ecosystem services. Milton (1999) argued that for an area to be sacred, it should be pristine. However, Lanna temples are far from pristine. Theravada buddhism and cosmological concepts are key elements of Lanna temple greenspace as formation of temple zoning, layout and site planning that support religious practice and ceremonies in the temple. This study can illustrate the function of the Lanna temple on the three dimensions of urban greenspace as ecosystem provision services, regulation services, and cultural and spiritual services within the urban setting.

Modernization would frequently eliminate the original cultural landscape pattern. Promotion of policy for the physical development of temples by the Thai government in 1981 A.D. (Nongmar, et al., 2013) has resulted in increasing competition when creating new Buddhist landscape architecture in Lanna temples. The rise of industrial materials such as concrete pavement has influenced the Lanna temple landscape, replacing the lawn and sand courts (Kittivechanon & Kongaun, 2011; Samadhi & Tantayanusorn, 2006; Tansukanan, 2004). Without the argument of cultural value, this issue dramatically and directly impacts the quantity and quality of Lanna temple greenspace.

The sacred structures are considered to be more important than the sacred trees (Khanjanusthiti, 1996). If a sacred tree has grown next to a Pagoda (chedi) or a Pavilion (Viharn), its branches or roots can cause damage to the sacred structure, so, as a result, many trees in Lanna temples have been cut down without thinking of pruning or transplanting or without any concern in the value of the heritage tree.

Many Lanna temples suffer from insufficient vegetation management, with most of the temples having no specific vegetation management plan (Kittivechanon & Kongaun, 2011) Most temple members are unaware that fragmented urban forests are not self-sustaining because managing and restoring urban forest areas rest on the subjective questions of what is considered natural or aesthetically pleasing (Gobster, 2001; Tyrväinen, et al., 2003). In addition, managing landscapes that have been an integral part of the culture of a certain

region involves various perceptions of what is considered ‘culturally appropriate’ (Lewis, 2008). Development is being continued by urbanization in much of what is cultural heritage protection areas, but the golden principles of the harmonious relationship between nature and human beings from the local wisdom have to apply in the new works (Han, 2008). A holistic approach is needed that integrates the biological and cultural components within the entire landscape, especially when the cultural components of landscape have certain iconic values which symbolize the natural, historical, and social context (Ihse & Lindahl, 2000). For example, heritage trees can be used as icons for conservation (Thaiutsa, et al., 2008). Because social and cultural values can be so diverse, ecological studies are needed to form a solid scientific basis for conservation and management of urban greenspace that fosters public confidence in the process (Mazzotti & Morgenstern, 1997). The characteristics and the sense of the place are being intensively enhanced. There are also political and economic benefits to integrating the Lanna temple into the planning of urban green space. Residents benefit from access to green space in many ways, and urban green space can increase property values by creating aesthetically pleasing, livable neighborhoods (Gao & Asami, 2007), which should motivate residents to preserve the temple greenspace in their communities.

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